<u>Software Project Management Micro-Syllabus</u>

Tribhuvan University
Bachelor of Science in Computer Science and Information Technology
Course Title: **Software Project Management**

Course No.:   CSC-408
Credit Hours: 3
Nature of Course: Theory (3 Hrs.) + Lab (3 Hrs.)

Course Synopsis: Concept of software project, software project management framework

Goal: This course introduces the concepts of Software Project, software project management framework, project evaluation, Software quality assurance and project management and its tools.

Micro-Syllabus

Unit	Breakdown	Hours
1. **Introduction to Software Project Management (SPM)**	1. Software engineering problem and software product, software product attributes	1
	2. Definition of a Software Project (SP), SP Vs. other types of projects	1
	3. Activities covered by SPM, categorizing SPs	1
	4. Project management cycle, SPM framework, types of project plan	2
2. **Project Organization, Scheduling and management issues**	1. Project life cycle and product life cycle	2
	2. Project planning and scheduling	2
	3. Resource allocation	1
3. **Project Evaluation & Estimation**	1. Cost benefit analysis, cash flow forecasting, cost benefit evaluation techniques, risk evaluation	2
	2. Selection of an appropriate project report; Choosing technologies, choice of process model	1
	3. Structured methods, rapid application development, water fall	2
	4. Spiral-models, Prototyping	1
4. **Activity Planning**	1. Objectives of activity planning, project schedule, projects and activities	1
	2. Sequencing and scheduling activities, network planning model, representation of lagged activities	2
	3. Adding the time dimension, backward and forward pass. Identifying critical path	2
	4. Activity throat, shortening project, precedence networks	2
5. **Resource Allocation**	1. Introduction, the nature of resources, identifying resource requirements	1
	2. Scheduling resources creating critical path, counting the cost, being specific	2

		3. Publishing the resource schedule, cost schedules the scheduling sequence	1
6.	**Monitoring and Control**	1. Introduction, creating the framework, collecting the data, visualizing progress	1
		2. Cost monitoring, earned value, prioritizing monitoring	2
		3. Getting the project back to target, change control	1
7.	**Managing contracts and people**	1. Introduction, types of contract, stages on contract, placement, typical terms of a contract, contract management, acceptance	1
		2. Managing people and organizing terms: Introduction, understanding behavior, organizational behavior: a background, selecting the right person for the job, instruction in the best methods	2
		3. Motivation, working in groups, becoming a team, decision making, leadership, organizational structures, conclusion	2
8.	**Software quality assurance and testing**	1. Testing principles and objectives, test plan, types and levels of testing, test strategies	2
		2. Program verification and validation, software quality	1
		3. SEI-CMM, SQA activities, QA organization structure, SQA plan	2
9.	**Project management and project management tools**	1. Software configuration management, SCM tasks and roles	2
		2. Risk management, risk management process	1
		3. SPM tools	1

Laboratory Work: The project management activities will have to be performed using Project Management tools like MS Project, OpenProj etc.

Reference Books:
1. Software Project Management by Bob Hushes and Mike Cotterell, Latest Publication
2. Software Project Management – Rajeev Chopra, 2009
3. Software Engineering – A Practitioner's approach, Roger S. Pressman Latest Plublication
4. Software Project Management, Walker Royce, 1998, Addison Wesley
5. Managing Global Software Projects, Ramesh, 2001, TMH

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Model Question (Software Project Management)

Tribhuvan University
Bachelor of Science in Computer Science and Information Technology

Course Title: Software Project Management **Full Marks: 60**
Course No.: CSC-408 **Pass Marks: 24**

Model Question

Group A

Long Answer Questions (Attempt any Two). **[10×2=20]**

1. What are different steps of Project Planning? Describe activities in each step.
2. The table below is an example of project specification with estimated activity duration and precedence requirements:

Activity Name	Activity	Duration (Weeks)	Precedents
A	Hardware Selection	6	
B	System Configuration	4	
C	Install Hardware	3	
D	Data Migration	4	A
E	Draft Office Procedures	3	B
F	Recruit Staff	10	
G	User Training	3	E, F
H	Install and test system	2	C, D

Find the critical path of the project and calculate the earliest completion time of the project.
3. Why are process Capability Models more effective than product matrices? Describe any 3 capability models in detail.

Group B

Short Answer Questions (Attempt any EIGHT) **[8×5=40]**

4. What do you mean by Software Project Management? In what ways software projects are different from other types of projects?
5. Explain cost benefit evaluation techniques.
6. Why is it necessary to plan the activities?
7. What are different types of resources? How do you schedule them in the project?
8. How do you visualize progress of the project? Explain any two types.
9. Describe the typical terms of a contract.
10. Describe Verification and Validation of the Program.
11. What do you mean by configuration management? Write its importance in a software project.
12. What are different types of people in a team? Explain various stages a team passes through.
13. Write short notes on:
    a. Test Plan
    b. Change Control